

a1 Cont'd
separated from one another such that said end edges therebetween define a primarily concave opening.

18. The dilator of claim 18 wherein a back cut extends into said truss from said concave opening near each location where a said extension is joined with remaining portions of said truss.

REMARKS

This communication is in response to the Office Action of July 28, 1993. In that action, all claims were provisionally rejected for obviousness-type double patenting. In addition, claims 1 through 4, 8, 9, 11, 12 and 16 were rejected on the merits, while claims 5 through 7, 10 and 13 through 15 were objected to as being dependent on rejected claims. The applicants have added two further claims to more fully claim the present invention.

The Examiner first rejects claims 1 through 16 for obviousness-type double patenting over two copending applications commonly assigned to the same assignee as the present application, the first being Serial No. 08/048,589 filed prior to the present application, and the second being Serial No. 08/050,557 filed on even date with the present application. The Examiner contends as a basis for this rejection that the claims in the other two applications as well as the present application have the same elements, elements that have been merely renamed and rearranged to form the only differences therebetween. With this contention, the applicants must respectfully disagree.

Although a truss or a truss member is indeed recited in each of the independent claims presented in these applications, the elements of such a truss or truss member are different in the independent claims of each application from those in the other applications. In the present application, the resilient means of claim 1 is recited as terminating at edges of the end regions, a limitation which does not appear in the claims of either of the other two applications. Thus, there is the possibility of a device which infringes claims of the other two applications but does not infringe the claims of the present application, a situation which shows the present claims to be distinct from those in these other applications and so unable to serve to extend the grant

provided by the claims in those applications were they to issue. In these circumstances, the applicants respectfully submit there is no sound basis for this rejection, and that these claims should be allowable despite the claims present in the other applications cited.

The Examiner then goes on to reject claims 1, 8, 9, 11 and 12 under 35 U.S.C. § 103 as being obvious in the face of U.S. Patent 1,292,083 to Sawyer. The Examiner contends that the extension of the resilient bands to the edges in the present invention provides no unexpected results over the spring member connection to the center of the adhesive material pads shown in the Sawyer reference. With this contention, the applicants must again respectfully disagree.

Unexpected results are by definition present when such results are not described at all in the prior art, or are not suggested sufficiently in the prior art to one skilled in that art to enable that person to gain the desired outcome. Determination of the peel forces and the shear forces occurring at the interface between the user's skin and the adhesive used to mount the dilator on that nonlinear skin base - in the presence of the nonlinear materials used in forming the truss - would be a very difficult problem. Finding those such forces that result from this nonlinear skin base being frequently in motion, and frequently subject to changing external forces that are either continual or randomly incident, and then finding an optimal interconnection geometry that keeps such forces below the adhesive yield point over varying temperatures, is an intractable problem in nonlinear continuum mechanics and the mechanics of materials. Even one with great skill in the art of continuum mechanics and adhesive attachment, and having access to modern calculating means, would find determining any reliable solution prohibitively difficult. Thus, a substantial amount of design effort, insight and experimentation is needed to find a design for the dilator which does not become disengaged from the user's skin in such conditions, especially insight. That spark of invention is most necessary because there is no practical way to otherwise solve such a problem.

However, rather than facing this problem, the Sawyer reference entirely prevents this problem from arising, and so can teach nothing of a solution to that problem. The Sawyer reference teaches complete avoidance of the problem by having the adhesive pads of the Sawyer

dilator adhered so strongly to the user's skin that they require a solvent to remove. Clearly, pads so mounted adhesively cannot be separated from the user's skin even with the direct force of the user's fingers unless the user is willing to undergo significant injury. Providing such a overpoweringly strong adhesion between the Sawyer pads and the user's skin entirely overwhelms the effects of any peel or shear forces present at the interface therebetween, but at a huge cost in convenience to the user to say nothing of the cost to the user in the risk of using solvents near the user's eye. Such a large adhesive force permits the peel forces and shear forces resulting at the interface between the pads and the skin be ignored, a convenience not available in the present invention, and also strongly suggests that the Sawyer spring member be connected at the center of the Sawyer adhesive pads so that the force applied thereby is symmetrically distributed to that interface to prevent uneven pulling of the user's skin.

This kind of center symmetrical connection between the resilient means and the end regions of the truss is impossible in the present invention, as the resilient means provides a distributed force over the end sections of the truss which cannot be made symmetrical about any center of the adhesive mass used between the truss and the skin of the user. Thus, there is no basis whatsoever in the Sawyer reference to find any teaching about where the resilient means of the present invention should end in the truss end regions since (a) the problem giving rise to a question about where the resilient means should end in the present invention is nearly entirely avoided in the Sawyer reference, and because (b) the location chosen in the Sawyer dilator pad to both begin and end the spring member connection could only be an ending point in the present invention. In view of this utter lack of direction to one skilled in the art in the Sawyer reference with respect to the present invention, the applicants respectfully submit that claim 1 is clearly allowable over the Sawyer reference.

Claims 8, 9, 11 and 12 describe further provisions for preventing delamination of the truss from the skin of the user. Since nothing short of a solvent will separate the Sawyer adhesive pads from the skin of the user, the hooks of the Sawyer spring member are irrelevant insofar as delamination. This is also true for the plurality of notches at the opposite ends of the Sawyer spring that are merely provided to permit use with different noses having varying

amounts of protrusion from the rest of the face of the users. Thus, seemingly beyond question, these remaining claims should be allowable over the Sawyer reference in the absence therein of any structure provided at the edges of the adhesive pads described there for preventing delamination of those pads from the user's skin.

In a further rejection, the Examiner rejects claims 2 through 4 and 16 under 35 U.S.C. § 103 as being obvious in the face of the Sawyer reference taken further in view of U.S. Patent 5,022,389 to Brennan. The Examiner seems to contend that the splint of Brennan could be used in place of the Sawyer dilator. That is, the Sawyer spring member and, apparently, the Sawyer adhesive pads, in the Examiner's view, can be replaced by the inner splint, compressible layer, and splint stabilizer of Brennan taken as combination to be mounted adhesively, i.e. essentially substitute the Brennan structure for the Sawyer structure. However, such a combination cannot be workable as the structure of one is the clear antagonist of the structure of the other. The Sawyer structure is used to pull the outer walls of the nose apart, i.e. dilate, while the Brennan structure is used to pressure the outer walls of the nose together, i.e. squeeze. The ability of the Brennan splint to operate under tension and shear forces, rather than under the compression forces it is designed to accommodate, is entirely speculative even if there was a provision made for its use as a dilator, which there isn't. Thus, one skilled in the art considering accomplishing the function of one of the Sawyer and Brennan structures would hardly look to the other - this other being designed to provide the opposite function - for aid in that effort. In such a situation, these claims are clearly allowable over the cited references. Further, these claims, in ultimately depending on claim 1, should also be allowable on the grounds that the Brennan reference clearly does not overcome the shortcomings in the teachings of the Sawyer reference with respect to having a resilient means reaching the end edges of the end regions as set forth in that claim.

Finally, the Examiner objects to claims 5 through 7, 10, and 13 through 15 as ultimately depending on a rejected claim but indicates that these claims would be allowable if rewritten in independent form. The applicants believe they have demonstrated above that all of

the claims are allowable and therefore will not so rewrite these claims at this time. However, the applicants stand ready to do so in the future if that becomes appropriate.

In view of the foregoing, the applicants respectfully request that the Examiner reconsider her rejection of the claims, and further request the Examiner now allow these claims and those added.

The Commissioner is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 11-0982. A duplicate copy of this communication is enclosed.

Any inquiries regarding this application should be directed to Theodore F. Neils at (612) 339-1863.

Respectfully submitted,

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